

3R-1012

**Release Report/ General
Correspondence**

Enterprise RA

Date: Oct-Dec 2016

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office
in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: Lateral 2C-24	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: Jicarilla Apache Tribe	Mineral Owner: Jicarilla Apache Tribe	Serial Number: N/A
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LOCATION OF RELEASE

Unit Letter M	Section 2	Township 24N	Range 5W	Feet from the 318	North <u>South</u> Line	Feet from the 857	East <u>West</u> Line	County Santa Fe
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Latitude 36.334436 Longitude -107.336924

OIL CONSERVATION DIV. DIST. 3
NOV 28 2016

NATURE OF RELEASE

Type of Release: Natural Gas and Condensate	Volume of Release 3.31 MCF Gas; 10-20 bbls of Condensate	Volume Recovered: None
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: 8/8/2016 @ 10:50 a.m.	Date and Hour of Discovery: 8/9/2016 @ 10:50 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Hobson Sandoval – JAEPO; Waymore Callado - JAOGA	
By Whom? Runell Seal	Date and Time August 10, 2016 @ 11:12 a.m.	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume	

OIL CONSERVATION DIV. DIST. 3
NOV 28 2016

If a Watercourse was Impacted, Describe Fully.* The release is located in a small ephemeral wash.

Describe Cause of Problem and Remedial Action: On August 9, 2016, Enterprise technicians discovered a gas leak on the Lateral 2C-24 pipeline. A small amount of condensate was observed on the ground surface. Repairs and remediation were completed on September 9, 2016.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 76 feet long by 18 feet wide ranging from four (4) to nine (9) feet deep. Approximately 144 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party corrective action report is included with this "Final" C-141.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist:	
Title: Director, Environmental	Approval Date: <u>12/29/2016</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>11/21/2016</u>	Phone: (713)381-6684	<u>NCS 1623028908</u>

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Lateral 2C-24 Pipeline Release Report

Unit Letter M, Section 2, Township 24 North, Range 5 West
Rio Arriba County, New Mexico

November 15, 2016

OIL CONS. DIV DIST. 3
NOV 28 2016

Prepared for:
Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

Prepared by:
Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

Enterprise Field Services, LLC Lateral 2C-24 Pipeline Release Report

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401



Heather M. Woods, P.G., Area Manager

Reviewed by:



Russell Knight, PG, Principal Hydrogeologist

November 15, 2016

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1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Lateral 2C-24 pipeline release site is located in Unit Letter M, Section 2, Township 24 North, Range 5 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from corrosion of the pipeline discovered on August 9, 2016.

On September 8, 2016, Enterprise initiated repair activities at the location. Site work included replacement of approximately 22 feet of pipeline and excavation of hydrocarbon impacted soils.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Release Summary

Site Name	Lateral 2C-24 Pipeline Release		
Site Location Description	Unit Letter M, Section 2, Township 24 North, Range 5 West (N36.33443, W107.33692)		
Land Jurisdiction	Jicarilla Apache Nation		
Discovery Date	August 9, 2016	Release Source	Hole in pipeline due to corrosion
JANEPO/NMOCD Site Rank	20		
Distance to Surface Water	The release site is located within an unnamed, ephemeral drainage which flows to a stockpond approximately 690 feet to the south		
Estimated Depth to Groundwater	Greater than 100 feet below grade surface (bgs)	Distance to Water Well or Spring	Greater than 1,000 feet
Contractor	West States Energy Contractor (West States)	Remedial Excavation Dimensions	18 feet by 76 feet by 4 to 9 feet in depth
Volume of Soil Transported for Disposal/Remediation	Approximately 144 cubic yards	Disposal Facility	TNT Landfarm (Permit #NM-01-0008)

3.0 JANEPO/NMOCD Site Ranking

The release site is located on the Jicarilla Apache Nation which utilizes the recommendations from the New Mexico Oil Conservation Division (NMOCD) for release response guidelines. In accordance with the NMOCD Guidelines for Remediation of

Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 20 (Table 1).

Depth to groundwater at the site is estimated to be greater than 100 feet below grade surface (bgs) based on the elevation differential between the release location and large local washes.

A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

The release site is located within an unnamed, ephemeral drainage which flows to a stockpond approximately 6990 feet to the south.

Based on the ranking score of 20, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

4.0 Field Activities

On September 8, 2016, Enterprise initiated repair activities at the location. West States provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. The repair included the replacement of approximately 22 feet of pipeline and excavation of the hydrocarbon impacted soils. Samples were collected from the repair excavation on September 8, 2016. Laboratory analysis for sample SC-5 indicated TPH concentrations above JANEPO/NMOCD action levels and the west half of the excavation was deepened and sampled on September 9, 2016. Approximately 144 cubic yards of hydrocarbon impacted soils were removed from an area of excavation measuring approximately 18 feet by 76 feet by 4 to 9 feet in depth. Excavated soils were transported to TNT Landfarm for disposal/remediation and the excavation was backfilled with clean, imported soils from a nearby stockpond selected by JANEPO.

A depiction of the excavation with sample locations is included as Figure 3. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix A and a photograph log is included in Appendix B.

5.0 Soil Sampling

Rule collected confirmation soil samples (SC-1 through SC-9) from the sidewalls and bases of the excavation. Each confirmation soil sample is a representative composite comprised of five equivalent aliquots of soil collected from the sampled area.

A portion of each sample was field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B and TPH (GRO/DRO) per USEPA 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory reports are included in Appendix C.

6.0 Laboratory Analytical Results

Laboratory analytical results for confirmation samples SC-1 through SC-9 reported benzene and total BTEX concentrations below the laboratory reporting limits, except for sample SC-5 with a total BTEX concentration of 11 mg/kg, all of which are below applicable JANEPO/NMOCD action levels. Laboratory analytical results for the excavation confirmation samples reported TPH (GRO/DRO) concentrations ranging from below laboratory reporting limits to 2,620 mg/kg, which are below the JANEPO/NMOCD action level of 100 mg/kg except for sample SC-5 that was removed by excavation. Laboratory analytical results are summarized in Table 2.

7.0 Conclusions

The Enterprise Lateral 2C-24 pipeline release site is located in Unit Letter M, Section 2, Township 24 North, Range 5 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from corrosion of the pipeline discovered on August 9, 2016. Subsequent to replacement of about 22 feet of pipeline, confirmation samples SC-1 through SC-5 were collected from the sidewalls and bases of the excavation. Laboratory analytical results indicated TPH concentrations in sample SC-5 exceeded the JANEPO/NMOCD action level and the west half of the excavation was deepened. Confirmation samples SC-6 through SC-10 were collected from the lower sidewalls and west base of the final excavation which measured approximately 18 feet by 76 feet by 4 to 9 feet in depth. Laboratory analytical results for the soil confirmation samples SC-1 through SC-10 (excluding SC-5 which was removed by excavation) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable JANEPO/NMOCD action levels. Approximately 144 cubic yards of hydrocarbon impacted soils were excavated and transported to the TNT Landfarm and the excavation was backfilled with clean, imported soils from a nearby stockpond selected by JANEPO.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended.

8.0 Closure and Limitations

This report has been prepared for the exclusive use of Enterprise and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with Enterprise. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

Tables

Table 1. JANEPO/NMOCD Site Ranking Determination
Enterprise Field Services, LLC
Lateral 2C-24 Pipeline Release
Rio Arriba County, New Mexico

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential information between the location and large local washes from the topographic map.	NMOCD Online database, Otero Store Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Otero Store Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	20	The release site is located within an unnamed, ephemeral drianage which flows to a stockpond approximately 690 feet to the south.	Otero Store Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		20		

Table 2. Soil Sampling Results - Benzene, Total BTEX, and TPH
Enterprise Field Services, LLC
Lateral 2C-24 Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Location	Approximate Sample Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
JANEPO/NMOCD Action Levels*				10	NE	NE	NE	50	100**	
Removed by Excavation										
SC-5	8/31/2016	Base	4	<0.011	0.90	0.91	11	13	320	2,300
Excavation Confirmation Samples										
SC-1	8/31/2016	West Wall	0 to 4	<0.021	<0.041	<0.041	<0.083	<0.186	<4.1	<10
SC-2	8/31/2016	South Wall	0 to 4	<0.020	<0.039	<0.039	<0.079	<0.177	<3.9	23
SC-3	8/31/2016	East Wall / East Base	0 to 4	<0.018	<0.036	<0.036	<0.073	<0.163	<3.6	15
SC-4	8/31/2016	North Wall	0 to 4	<0.020	<0.039	<0.039	<0.079	<0.177	<3.9	30
SC-6	9/9/2016	Base	9	<0.019	<0.037	<0.037	<0.075	<0.168	<3.7	<9.9
SC-7	9/9/2016	South Wall	4 to 9	<0.020	<0.039	<0.039	<0.079	<0.177	<3.9	<9.8
SC-8	9/9/2016	North Wall	4 to 9	<0.021	<0.041	<0.041	<0.083	<0.186	<4.1	<10
SC-9	9/9/2016	East Wall	4 to 9	<0.020	<0.040	<0.040	<0.080	<0.180	<4.0	<9.8
SC-10	9/9/2016	West Wall	4 to 9	<0.020	<0.039	<0.039	<0.079	<0.177	<3.9	<10

Notes: PID - photoionization detector
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not-established

JANEPO - Jicarilla Apache Nation Environmental Protection Office

*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*

**Based on a site ranking of 20.

BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH - total petroleum hydrocarbons

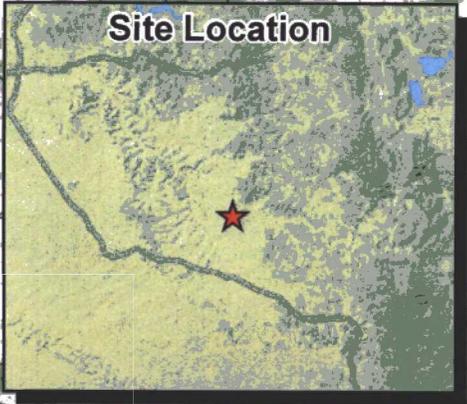
GRO - gasoline range organics

DRO - diesel range organics

NMOCD - New Mexico Oil Conservation Division

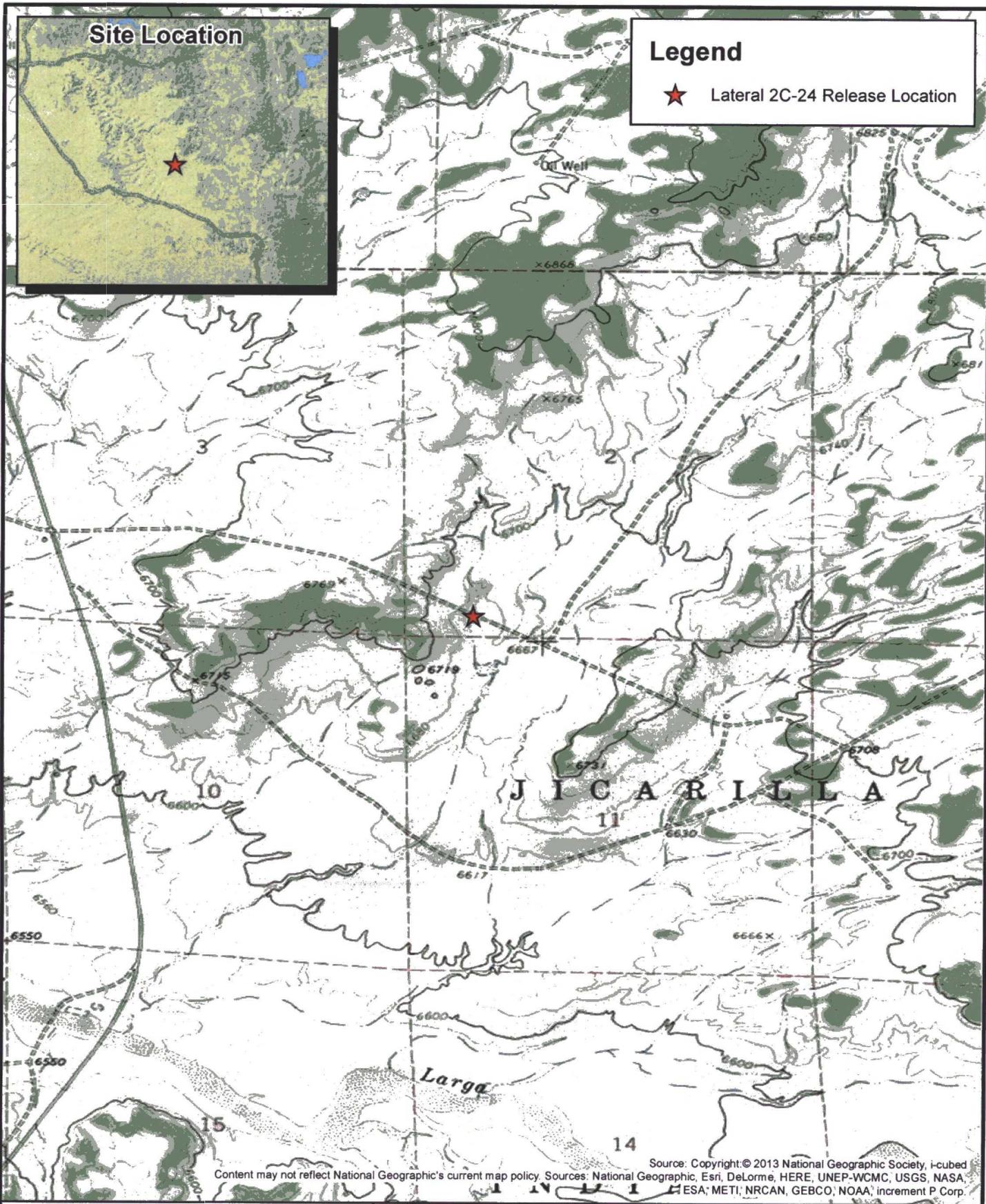
Figures

Document Path: U:\Enterprise Products\2C-24\2C-24 Release Topo Map.mxd



Legend

★ Lateral 2C-24 Release Location



Source: Copyright © 2013 National Geographic Society, i-cubed
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA
ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Rule Engineering, LLC
Solutions to Regulations for Industry

0 1,050 2,100 4,200 Feet

Lapis Point Quadrangle
1:24,000

Enterprise Products

M-S02-T24N-R05W
N36.33443, W107.33692
Rio Arriba County, NM

Figure 1
Topographic Site Map
2C-24
Pipeline Release

Legend

- ★ Release Location
- ◊ S Sample_Location
- - - Excavation Perimeter
- █ Pipeline Repair Excavation (4 ft in depth)
- █ Remedial Excavation (9 ft in depth)
- P - Lateral 2C-24 Pipeline

SC-1 (0 to 4 ft)
/ SC-10 (4 to 9 ft)

SC-8 (4 to 9 ft)

SC-5 (Removed - 4 ft)
/ SC-6 (9 ft)

SC-4 (0 to 4 ft)

SC-7 (4 to 9 ft)

SC-9 (4 to 9 ft)

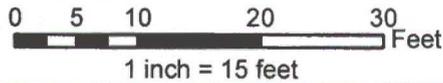
SC-2 (0 to 4 ft)

SC-3 (0 to 4 ft)

Document Path: U:\Enterprise Products\2C-24\2C-24 Release Aerial Map.mxd

Source: Google Earth

Rule Engineering, LLC
Solutions to Regulations for Industry



M-S02-T24N-R05W
N36.33443, W107.33692
Rio Arriba County, NM

Figure 2
Aerial Site Map
2C-24
Pipeline Release

Appendix A

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New-Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. **Generator Name and Address:**
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

2. **Originating Site: Lateral 2C-24**

3. **Location of Material (Street Address, City, State or ULSTR):**
UL M Section 2 T24N R5W; 36.334426, -107.336924

4. **Source and Description of Waste:**
Source: Natural Gas Pipeline Release
Description: Hydrocarbon impacted soils associated with remediation activities for a natural gas pipeline release.
Estimated Volume 50 yd³ Known Volume (to be entered by the operator at the end of the haul) 144 yd³ bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long, representative or authorized agent for Enterprise Field Services, LLC do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

- RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency Monthly Weekly Per Load
- RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

- MSDS Information RCRA Hazardous Waste Analysis Process Knowledge Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long, 8-31-16, representative for Enterprise Field Services, LLC authorize TNT Landfarm, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Craig, representative for TNT Landfarm, Inc. do hereby certify that
Representative/Agent Signature
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: Various approved trucking

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: TNT Evap Pond/Landfarm, NM01-0008
Address of Facility: 70 CR 405, Lindrieth NM

- Method of Treatment and/or Disposal:
 Evaporation Injection Treating Plant Landfarm Landfill Other

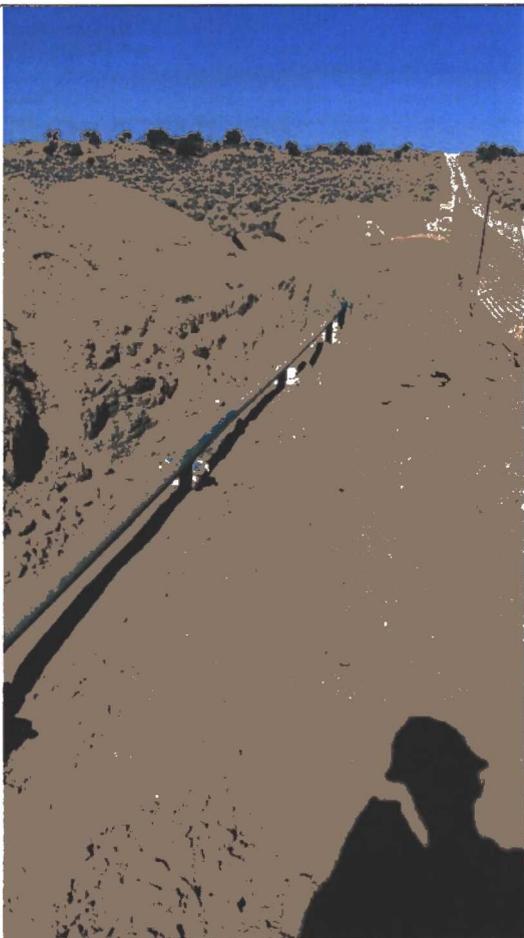
Waste Acceptance Status:
 APPROVED DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Craig TITLE: Pios DATE: 9-9-16
SIGNATURE: _____ TELEPHONE NO.: _____
Surface Waste Management Facility Authorized Agent

Appendix B
Photograph Log

Photograph Log
Lateral 2C-24 Pipeline Release
Enterprise Field Services, LLC

Rule

Photograph #1	
Client: Enterprise	
Site Name: Lateral 2C-24 Pipeline Release	
Date Photo Taken: September 9, 2016	
Release Location: N36.33443, W107.33692 M-2-24N-5W Rio Arriba County, NM	
Photo Taken by: Justin Valdez	Description: Facing southeast, view of east half of the final excavation.

Photograph Log
Lateral 2C-24 Pipeline Release
Enterprise Field Services, LLC

Photograph #2	
Client: Enterprise	
Site Name: Lateral 2C-24 Pipeline Release	
Date Photo Taken: September 9, 2016	
Release Location: N36.33443, W107.33692 M-2-24N-5W Rio Arriba County, NM	
Photo Taken by: Justin Valdez	
Description: Facing west, view of west half of the final excavation.	

Appendix C
Analytical Laboratory Reports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 07, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Lateral 2C-24

OrderNo.: 1609001

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/1/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 06, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609001

Date Reported: 9/7/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Lateral 2C-24

Collection Date: 8/31/2016 10:40:00 AM

Lab ID: 1609001-001

Matrix: MEOH (SOIL)

Received Date: 9/1/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/1/2016 9:49:48 AM	27297
Surr: DNOP	90.4	70-130		%Rec	1	9/1/2016 9:49:48 AM	27297
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/1/2016 9:48:19 AM	27285
Surr: BFB	88.0	68.3-144		%Rec	1	9/1/2016 9:48:19 AM	27285
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	9/1/2016 9:48:19 AM	27285
Toluene	ND	0.041		mg/Kg	1	9/1/2016 9:48:19 AM	27285
Ethylbenzene	ND	0.041		mg/Kg	1	9/1/2016 9:48:19 AM	27285
Xylenes, Total	ND	0.083		mg/Kg	1	9/1/2016 9:48:19 AM	27285
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	9/1/2016 9:48:19 AM	27285

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1609001
 Date Reported: 9/7/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Lateral 2C-24

Collection Date: 8/31/2016 10:50:00 AM

Lab ID: 1609001-002

Matrix: MEOH (SOIL)

Received Date: 9/1/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	23	10		mg/Kg	1	9/1/2016 10:11:30 AM	27297
Surr: DNOP	94.3	70-130		%Rec	1	9/1/2016 10:11:30 AM	27297
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/1/2016 10:11:50 AM	27285
Surr: BFB	86.3	68.3-144		%Rec	1	9/1/2016 10:11:50 AM	27285
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	9/1/2016 10:11:50 AM	27285
Toluene	ND	0.039		mg/Kg	1	9/1/2016 10:11:50 AM	27285
Ethylbenzene	ND	0.039		mg/Kg	1	9/1/2016 10:11:50 AM	27285
Xylenes, Total	ND	0.079		mg/Kg	1	9/1/2016 10:11:50 AM	27285
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/1/2016 10:11:50 AM	27285

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1609001
 Date Reported: 9/7/2016

CLIENT: Rule Engineering LLC
Project: Lateral 2C-24
Lab ID: 1609001-003

Client Sample ID: SC-3
Collection Date: 8/31/2016 10:55:00 AM
Received Date: 9/1/2016 8:00:00 AM

Matrix: MEOH (SOIL)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	15	10		mg/Kg	1	9/1/2016 10:33:03 AM	27297
Surr: DNOP	95.0	70-130		%Rec	1	9/1/2016 10:33:03 AM	27297
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/1/2016 10:35:14 AM	27285
Surr: BFB	87.0	68.3-144		%Rec	1	9/1/2016 10:35:14 AM	27285
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	9/1/2016 10:35:14 AM	27285
Toluene	ND	0.036		mg/Kg	1	9/1/2016 10:35:14 AM	27285
Ethylbenzene	ND	0.036		mg/Kg	1	9/1/2016 10:35:14 AM	27285
Xylenes, Total	ND	0.073		mg/Kg	1	9/1/2016 10:35:14 AM	27285
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	9/1/2016 10:35:14 AM	27285

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1609001

Date Reported: 9/7/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Lateral 2C-24

Collection Date: 8/31/2016 11:00:00 AM

Lab ID: 1609001-004

Matrix: MEOH (SOIL)

Received Date: 9/1/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	30	9.9		mg/Kg	1	9/1/2016 10:54:43 AM	27297
Surr: DNOP	96.4	70-130		%Rec	1	9/1/2016 10:54:43 AM	27297
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/1/2016 10:58:48 AM	27285
Surr: BFB	89.2	68.3-144		%Rec	1	9/1/2016 10:58:48 AM	27285
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	9/1/2016 10:58:48 AM	27285
Toluene	ND	0.039		mg/Kg	1	9/1/2016 10:58:48 AM	27285
Ethylbenzene	ND	0.039		mg/Kg	1	9/1/2016 10:58:48 AM	27285
Xylenes, Total	ND	0.079		mg/Kg	1	9/1/2016 10:58:48 AM	27285
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	9/1/2016 10:58:48 AM	27285

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1609001
 Date Reported: 9/7/2016

CLIENT: Rule Engineering LLC
Project: Lateral 2C-24
Lab ID: 1609001-005

Client Sample ID: SC-5
Collection Date: 8/31/2016 11:10:00 AM
Received Date: 9/1/2016 8:00:00 AM

Matrix: MEOH (SOIL)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	2300	98		mg/Kg	10	9/1/2016 12:43:00 PM	27297
Surr: DNOP	0	70-130	S	%Rec	10	9/1/2016 12:43:00 PM	27297
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	320	22		mg/Kg	5	9/1/2016 11:22:18 AM	27285
Surr: BFB	433	68.3-144	S	%Rec	5	9/1/2016 11:22:18 AM	27285
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.11		mg/Kg	5	9/1/2016 11:22:18 AM	27285
Toluene	0.90	0.22		mg/Kg	5	9/1/2016 11:22:18 AM	27285
Ethylbenzene	0.91	0.22		mg/Kg	5	9/1/2016 11:22:18 AM	27285
Xylenes, Total	11	0.44		mg/Kg	5	9/1/2016 11:22:18 AM	27285
Surr: 4-Bromofluorobenzene	131	80-120	S	%Rec	5	9/1/2016 11:22:18 AM	27285

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609001

07-Sep-16

Client: Rule Engineering LLC

Project: Lateral 2C-24

Sample ID	LCS-27297	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	27297	RunNo:	36921					
Prep Date:	9/1/2016	Analysis Date:	9/1/2016	SeqNo:	1144206	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.8	62.6	124			
Surr: DNOP	4.7		5.000		94.2	70	130			

Sample ID	MB-27297	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	27297	RunNo:	36921					
Prep Date:	9/1/2016	Analysis Date:	9/1/2016	SeqNo:	1144207	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.8		10.00		97.5	70	130			

Sample ID	1609001-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	27297	RunNo:	36921					
Prep Date:	9/1/2016	Analysis Date:	9/1/2016	SeqNo:	1144595	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.7	48.31	0	91.9	33.9	141			
Surr: DNOP	4.5		4.831		92.4	70	130			

Sample ID	1609001-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	27297	RunNo:	36921					
Prep Date:	9/1/2016	Analysis Date:	9/1/2016	SeqNo:	1144596	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.7	48.40	0	85.9	33.9	141	6.51	20	
Surr: DNOP	4.0		4.840		82.5	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609001

07-Sep-16

Client: Rule Engineering LLC

Project: Lateral 2C-24

Sample ID	MB-27285	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	27285	RunNo:	36929					
Prep Date:	8/31/2016	Analysis Date:	9/1/2016	SeqNo:	1144862	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.5	68.3	144			

Sample ID	LCS-27285	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	27285	RunNo:	36929					
Prep Date:	8/31/2016	Analysis Date:	9/1/2016	SeqNo:	1144863	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	80	120			
Surr: BFB	950		1000		95.3	68.3	144			

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609001

07-Sep-16

Client: Rule Engineering LLC

Project: Lateral 2C-24

Sample ID	MB-27285	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	27285	RunNo:	36929					
Prep Date:	8/31/2016	Analysis Date:	9/1/2016	SeqNo:	1144885	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID	LCS-27285	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	27285	RunNo:	36929					
Prep Date:	8/31/2016	Analysis Date:	9/1/2016	SeqNo:	1144886	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	99.5	75.3	123			
Toluene	0.96	0.050	1.000	0	95.7	80	124			
Ethylbenzene	0.96	0.050	1.000	0	96.1	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.5	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1609001

RcptNo: 1

Received by/date:

LC *oslatice*

Logged By: Lindsay Mangin

9/1/2016 8:00:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

9/1/2016 8:32:24 AM

Lindsay Mangin

Reviewed By:

AS *09/01/16*

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Courier

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. suite 205
Albuquerque, NM 87101
 Phone #: 505 793 9486

Email or Fax#: juan@ruleengineering.com

VQC Package:
 Standard Level 4 (Full Validation)

Creditation:
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush same Day

Project Name: Lateral
2C-43 2C-24

Project #: 18 my 09/07/16
per Tom.

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: Yes No

Sample Temperature: 2.1



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / TPH)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8/16	1040	Soil	SL-1	4oz Glass	Cold	16079001 -001	X	X										
	1050		SL-2			-002	X	X										
	1055		SL-3			-003	X	X										
	1100		SL-4			-004	X	X										
	1110		SL-5			-005	X	X										

Relinquished by:	Received by:	Date	Time	Remarks:
Justin Valdez	Justin Valdez	8/31/16	1707	
Relinquished by:	Received by:	Date	Time	
Justin Valdez	Lindsey Concha	09/01/16	0800	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 20, 2016

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Enterprise 2C-24

OrderNo.: 1609494

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/10/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 13, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Enterprise 2C-24
Lab ID: 1609494-001

Client Sample ID: SC-6
Collection Date: 9/9/2016 12:55:00 PM
Received Date: 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/12/2016 10:28:57 AM	27432
Surr: DNOP	114	70-130		%Rec	1	9/12/2016 10:28:57 AM	27432
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	9/12/2016 11:23:22 AM	G37123
Surr: BFB	87.6	68.3-144		%Rec	1	9/12/2016 11:23:22 AM	G37123
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.019		mg/Kg	1	9/12/2016 11:23:22 AM	R37123
Toluene	ND	0.037		mg/Kg	1	9/12/2016 11:23:22 AM	R37123
Ethylbenzene	ND	0.037		mg/Kg	1	9/12/2016 11:23:22 AM	R37123
Xylenes, Total	ND	0.075		mg/Kg	1	9/12/2016 11:23:22 AM	R37123
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	9/12/2016 11:23:22 AM	R37123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1609494
 Date Reported: 10/20/2016

CLIENT: Rule Engineering LLC
Project: Enterprise 2C-24
Lab ID: 1609494-002

Client Sample ID: SC-7
Collection Date: 9/9/2016 2:55:00 PM
Matrix: MEOH (SOIL) **Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/12/2016 10:50:45 AM	27432
Surr: DNOP	100	70-130		%Rec	1	9/12/2016 10:50:45 AM	27432
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/12/2016 11:47:36 AM	G37123
Surr: BFB	87.2	68.3-144		%Rec	1	9/12/2016 11:47:36 AM	G37123
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.020		mg/Kg	1	9/12/2016 11:47:36 AM	R37123
Toluene	ND	0.039		mg/Kg	1	9/12/2016 11:47:36 AM	R37123
Ethylbenzene	ND	0.039		mg/Kg	1	9/12/2016 11:47:36 AM	R37123
Xylenes, Total	ND	0.079		mg/Kg	1	9/12/2016 11:47:36 AM	R37123
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	9/12/2016 11:47:36 AM	R37123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-8**Project:** Enterprise 2C-24**Collection Date:** 9/9/2016 1:30:00 PM**Lab ID:** 1609494-003**Matrix:** MEOH (SOIL)**Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/12/2016 11:12:27 AM	27432
Surr: DNOP	102	70-130		%Rec	1	9/12/2016 11:12:27 AM	27432
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/12/2016 12:11:51 PM	G37123
Surr: BFB	89.2	68.3-144		%Rec	1	9/12/2016 12:11:51 PM	G37123
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.021		mg/Kg	1	9/12/2016 12:11:51 PM	R37123
Toluene	ND	0.041		mg/Kg	1	9/12/2016 12:11:51 PM	R37123
Ethylbenzene	ND	0.041		mg/Kg	1	9/12/2016 12:11:51 PM	R37123
Xylenes, Total	ND	0.083		mg/Kg	1	9/12/2016 12:11:51 PM	R37123
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	9/12/2016 12:11:51 PM	R37123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1609494
 Date Reported: 10/20/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SC-9

Project: Enterprise 2C-24

Collection Date: 9/9/2016 2:30:00 PM

Lab ID: 1609494-004

Matrix: MEOH (SOIL)

Received Date: 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/12/2016 11:46:33 AM	27432
Surr: DNOP	90.5	70-130		%Rec	1	9/12/2016 11:46:33 AM	27432
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	9/12/2016 12:36:10 PM	G37123
Surr: BFB	89.9	68.3-144		%Rec	1	9/12/2016 12:36:10 PM	G37123
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.020		mg/Kg	1	9/12/2016 12:36:10 PM	R37123
Toluene	ND	0.040		mg/Kg	1	9/12/2016 12:36:10 PM	R37123
Ethylbenzene	ND	0.040		mg/Kg	1	9/12/2016 12:36:10 PM	R37123
Xylenes, Total	ND	0.080		mg/Kg	1	9/12/2016 12:36:10 PM	R37123
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	9/12/2016 12:36:10 PM	R37123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-10**Project:** Enterprise 2C-24**Collection Date:** 9/9/2016 3:00:00 PM**Lab ID:** 1609494-005**Matrix:** MEOH (SOIL)**Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/12/2016 12:14:02 PM	27432
Surr: DNOP	84.4	70-130		%Rec	1	9/12/2016 12:14:02 PM	27432
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	9/12/2016 1:00:33 PM	G37123
Surr: BFB	86.5	68.3-144		%Rec	1	9/12/2016 1:00:33 PM	G37123
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.020		mg/Kg	1	9/12/2016 1:00:33 PM	R37123
Toluene	ND	0.039		mg/Kg	1	9/12/2016 1:00:33 PM	R37123
Ethylbenzene	ND	0.039		mg/Kg	1	9/12/2016 1:00:33 PM	R37123
Xylenes, Total	ND	0.079		mg/Kg	1	9/12/2016 1:00:33 PM	R37123
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	9/12/2016 1:00:33 PM	R37123

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609494

20-Oct-16

Client: Rule Engineering LLC

Project: Enterprise 2C-24

Sample ID	LCS-27432	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	27432	RunNo:	37115					
Prep Date:	9/12/2016	Analysis Date:	9/12/2016	SeqNo:	1150825	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	62.6	124			
Surr: DNOP	5.3		5.000		106	70	130			

Sample ID	MB-27432	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	27432	RunNo:	37115					
Prep Date:	9/12/2016	Analysis Date:	9/12/2016	SeqNo:	1150826	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	10		10.00		101	70	130			

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609494

20-Oct-16

Client: Rule Engineering LLC

Project: Enterprise 2C-24

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	G37123	RunNo:	37123					
Prep Date:		Analysis Date:	9/12/2016	SeqNo:	1152212	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	80	120			
Surr: BFB	920		1000		91.7	68.3	144			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	G37123	RunNo:	37123					
Prep Date:		Analysis Date:	9/12/2016	SeqNo:	1152213	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.6	68.3	144			

Sample ID	1609494-002A MS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SC-7	Batch ID:	G37123	RunNo:	37123					
Prep Date:		Analysis Date:	9/12/2016	SeqNo:	1152215	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.9	19.66	0	101	59.3	143			
Surr: BFB	740		786.2		93.8	68.3	144			

Sample ID	1609494-002A MSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SC-7	Batch ID:	G37123	RunNo:	37123					
Prep Date:		Analysis Date:	9/12/2016	SeqNo:	1152216	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.9	19.66	0	94.0	59.3	143	7.18	20	
Surr: BFB	710		786.2		90.5	68.3	144	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609494

20-Oct-16

Client: Rule Engineering LLC

Project: Enterprise 2C-24

Sample ID 100NG BTEX LCS		SampType: LCS		TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS		Batch ID: R37123		RunNo: 37123						
Prep Date:		Analysis Date: 9/12/2016		SeqNo: 1152219		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	75.3	123			
Toluene	1.0	0.050	1.000	0	104	80	124			
Ethylbenzene	1.0	0.050	1.000	0	99.8	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	97.7	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID 1609494-001A MS		SampType: MS		TestCode: EPA Method 8021B: Volatiles						
Client ID: SC-6		Batch ID: R37123		RunNo: 37123						
Prep Date:		Analysis Date: 9/12/2016		SeqNo: 1152220		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.019	0.7485	0	94.8	71.5	122			
Toluene	0.69	0.037	0.7485	0.005389	90.9	71.2	123			
Ethylbenzene	0.67	0.037	0.7485	0.006512	88.9	75.2	130			
Xylenes, Total	2.0	0.075	2.246	0.03660	87.3	72.4	131			
Surr: 4-Bromofluorobenzene	0.80		0.7485		107	80	120			

Sample ID 1609494-001A MSD		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: SC-6		Batch ID: R37123		RunNo: 37123						
Prep Date:		Analysis Date: 9/12/2016		SeqNo: 1152221		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.70	0.019	0.7485	0	93.4	71.5	122	1.46	20	
Toluene	0.65	0.037	0.7485	0.005389	85.9	71.2	123	5.61	20	
Ethylbenzene	0.64	0.037	0.7485	0.006512	84.5	75.2	130	5.01	20	
Xylenes, Total	1.9	0.075	2.246	0.03660	83.5	72.4	131	4.32	20	
Surr: 4-Bromofluorobenzene	0.80		0.7485		106	80	120	0	0	

Sample ID RB		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS		Batch ID: R37123		RunNo: 37123						
Prep Date:		Analysis Date: 9/12/2016		SeqNo: 1152222		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1609494**

RcptNo: 1

Received by/date:

AG

Logged By: **Ashley Gallegos**

AG
 9/10/2016 9:00:00 AM

Completed By: **Ashley Gallegos**

AG
 9/12/2016 7:56:28 AM

Reviewed By: *Jc* 09/12/16

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Courier

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels?
 (Note discrepancies on chain of custody) Yes No # of preserved bottles checked for pH: (<2 or >12 unless noted)
- 13. Are matrices correctly identified on Chain of Custody? Yes No Adjusted?
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met?
 (If no, notify customer for authorization.) Yes No Checked by:

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:

Date:

By Whom:

Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 508 501 Airport Dr. suite 25 Farmington, NM 87401

Phone #: 505 793 9486

Email or Fax#: jvaldez@ruleengineering.com

QC Package: Standard Level 4 (Full Validation)

Creditation: NELAP Other _____

EDD (Type) _____

Turn-Around Time: Standard Rush Same Day

Project Name: Enterprise 2C-24

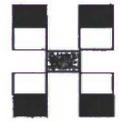
Project #: _____

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: Yes No

Sample Temperature: 1.1



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + THM's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / WES)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
9/6	1255	Soil	SC-1	4oz Glass	Cold	1609494-001	X		X									
9/6	1455		SC-2	↓	↓	-002	X		X									
9/6	1330		SC-3	↓	↓	-003	X		X									
9/6	1430		SC-4	↓	↓	-004	X		X									
9/6	1500	↓	SC-5	↓	↓	-005	X		X									

Date: 9/6 Time: 1718 Relinquished by: Justin Valdez Received by: Chris White Date: 9/9/16 Time: 1718

Date: 9/16 Time: 1941 Relinquished by: Heather Woods Received by: [Signature] Date: 09/10/16 Time: 0900

Remarks: _____

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office
in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: Lateral 2C-29	Facility Type: Natural Gas Gathering Pipeline

Surface Owner: Jicarilla Apache Nation	Mineral Owner: Jicarilla Apache Nation	API No.
-----------------------------------------------	-----------------------------------------------	---------

LOCATION OF RELEASE

Unit Letter E	Section 24	Township 25N	Range 5W	Feet from the 2515	North South Line	Feet from the 335	East West Line	County Rio Arriba
-------------------------	----------------------	------------------------	--------------------	-----------------------	--------------------------------	----------------------	------------------------------	-----------------------------

Latitude 36.385567 Longitude -107.319226

NATURE OF RELEASE

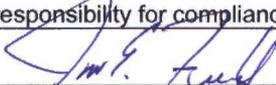
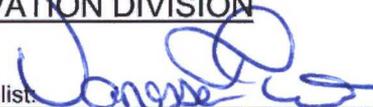
Type of Release: Natural Gas and Condensate	Volume of Release 17.5 MCF Gas; 5-10 BBLs Condensate	Volume Recovered: None
Source of Release: Internal Corrosion	Date and Hour of Occurrence: 7/27/2016 @ 10:00 a.m.	Date and Hour of Discovery: 7/26/2016 @ 12:00 p.m.
Was Immediate Notice Given? Required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not	If YES, To Whom? Hobson Sandoval – JAEPO; Waymore Callado – JAO&G; Cory Smith - NMOCD	
By Whom?	Date and Time July 27, 2015 @ 8:32 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume	

If a Watercourse was Impacted, Describe Fully.* The gas release site is located in a small ephemeral wash.

Describe Cause of Problem and Remedial Action: On January 27, 2016, Enterprise technicians discovered a gas leak on the Lateral 2C-29 pipeline. No fluids were observed on the ground surface. The pipeline was isolated, blown down, locked out and tagged out. Repairs and remediation were completed on August 9, 2016.

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 38 feet long by 19 feet wide by 19 feet deep. Approximately 484 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party corrective action report is included with this "Final" C-141.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: <u>11/3/2016</u>	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <u>10/27/2016</u> Phone: (713)381-6684	<u>NES1626051762</u>	

* Attach Additional Sheets If Necessary

**Lateral 2C-29 (7/26/2016)
Pipeline Release Report**

UL E, Sec 24, T25N, R5W
Rio Arriba County, New Mexico

October 4, 2016

OIL CONS. DIV DIST. 3

OCT 31 2016

Prepared for:
Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

Prepared by:
Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

**Enterprise Field Services, LLC
Lateral 2C-29 (7/26/2016)
Pipeline Release Report**

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, New Mexico 87401

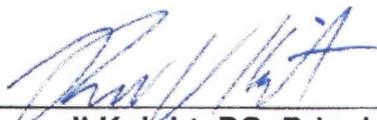
Prepared by:

Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401



Heather M. Woods, P.G., Area Manager

Reviewed by:



Russell Knight, PG, Principal Hydrogeologist

October 4, 2016

Table of Contents

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3.0	JANEP0/NMOCD Site Ranking	2
4.0	Field Activities	2
5.0	Soil Sampling	3
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7.0	Conclusions.....	3
8.0	Closure and Limitations	4

Tables

Table 1	NMOCD Site Ranking Determination
Table 2	Excavation Confirmation Soil Sample Results – Benzene, Total BTEX, and TPH
Table 3	Soil Boring Sampling Results – VOCs, Benzene, Total BTEX, and TPH

Figures

Figure 1	Topographic Map
Figure 2	Aerial Site Map
Figure 3	Soil Analytical Map

Appendices

Appendix A	Executed C-138 Soil Waste Acceptance Form
Appendix B	Photograph Log
Appendix C	Analytical Laboratory Reports

1.0 Introduction

The Enterprise Field Services, LLC (Enterprise) Lateral 2C-29 (7/26/2016) pipeline release site is located in Unit Letter E, Section 24, Township 25 North, Range 5 West, in Rio Arriba County, New Mexico, on the Jicarilla Apache Nation. The release resulted from corrosion of the pipeline which was discovered on July 26, 2016.

On August 9, 2016, Enterprise initiated repair activities at the location. Site work included repair of the pipeline and excavation of hydrocarbon impacted soils.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Release Summary

Site Name	Lateral 2C-29 (7/26/2016) Pipeline Release		
Site Location Description	Unit Letter E, Section 24, Township 25 North, Range 5 West (N36.38551, W107.31925)		
Land Jurisdiction	Jicarilla Apache Nation		
Discovery Date	July 26, 2016		
Release Report Date	July 26, 2016	Reported by	Thomas Long
Agency Notification	Jicarilla Apache Nation Environmental Protection Office (JANEPO) and New Mexico Oil Conservation Division (NMOCD)		
Release Source	Corrosion hole in pipeline	Substance(s) Released	Natural Gas and Pipeline Liquids
JANEPO/NMOCD Site Rank	10		
Distance to Surface Water	An unnamed, ephemeral wash is located approximately 350 feet southeast of the release location		
Estimated Depth to Groundwater	Greater than 100 feet below grade surface (bgs)	Distance to Water Well or Spring	Greater than 1,000 feet
Contractor	West States Energy Contractor, Inc. (West States)	Remedial Excavation Dimensions	38 feet by 19 feet by 19 feet in depth
Volume of Soil Transported for Disposal/Remediation	Approximately 484 cubic yards	Disposal Facility	TNT Landfarm (Permit #NM-01-0008)

3.0 JANEPO/NMOCD Site Ranking

The release site is located on the Jicarilla Apache Nation and follows recommendations from JANEPO. In accordance with JANEPO and NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1).

Depth to groundwater at the site is estimated to be greater than 100 feet below grade surface (bgs) based on the elevation differential between the release location and large, regional washes.

A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

An ephemeral wash traverses the area approximately 350 feet southeast of the release location.

Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

4.0 Field Activities

On August 8, 2016, Enterprise initiated repair activities at the location. West States provided heavy equipment operation and repair support. Rule Engineering, LLC (Rule) personnel provided excavation guidance and collected confirmation samples from the resultant excavation. The repair included the repair of the pipeline and excavation of the hydrocarbon impacted soils. Approximately 484 cubic yards of hydrocarbon impacted soils were removed from an area of excavation measuring approximately 38 feet by 19 feet by 19 feet in depth.

At the request of JANEPO, Rule returned to the location on August 18, 2016, to advance five soil borings (SB-1 through SB-5) in the area immediately surrounding the release location where shrubs appeared to be dead or dying. The soil borings were advanced utilizing a hand auger to a total depth of 12 feet bgs which is the limit of the equipment.

A depiction of the excavation with sample locations and summary of analytical results is included as Figure 3. A copy of the executed C-138 Solid Waste Acceptance Form is included in Appendix A and a photograph log is included in Appendix B.

5.0 Soil Sampling

Rule collected excavation confirmation soil samples (SC-1 through SC-5) from the sidewalls and base of the excavation. Each confirmation soil sample is a representative composite comprised of five equivalent aliquots of soil collected from the sampled area. Rule also collected soils samples at two foot intervals from each of the soils borings (SB-1 through SB-5).

A portion of each sample was field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photoionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All of the excavation confirmation samples, as well as two samples from each soil boring (one sample from the depth showing the highest VOC concentration and one sample from the bottom of the boring), were sent to the laboratory for analysis. Laboratory samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B or 8260B and TPH (GRO/DRO) per USEPA 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory reports are included in Appendix C.

6.0 Laboratory Analytical Results

Laboratory analytical results for excavation confirmation samples SC-1 through SC-5 reported benzene concentrations below the laboratory reporting limit, which are below the JANEPO action level of 10 mg/kg. Laboratory analytical results for excavation confirmation samples SC-1 through SC-5 reported total BTEX concentrations ranging from below the laboratory reporting limits to 6.8 mg/kg, which are below the JANEPO action level of 50 mg/kg. Laboratory analytical results for excavation confirmation samples SC-1 through SC-5 reported TPH (GRO/DRO) concentrations ranging from below the laboratory reporting limits to 153 mg/kg, which are below the JANEPO action level of 1,000 mg/kg.

Laboratory analytical results for soil borings SB-1 through SB-5 reported benzene, total BTEX, and TPH (GRO/DRO) concentrations below the laboratory reporting limits, which are below the applicable JANEPO action levels.

Laboratory analytical results are summarized in Table 2.

7.0 Conclusions

The Enterprise Lateral 2C-29 (7/26/2016) pipeline release site is located in Unit Letter E, Section 24, Township 25 North, Range 5 West, in Rio Arriba County, New Mexico, on the

Jicarilla Apache Nation. The release resulted from corrosion of the pipeline which was discovered on July 26, 2016. Subsequent to repair, approximately 484 cubic yards of hydrocarbon impacted soils were excavated and transported to the TNT Landfarm for disposal/remediation. Confirmation samples were collected from the sidewalls and base of the resultant excavation which measured approximately 38 feet by 19 feet by 19 feet in depth. Soil borings were advanced in the immediate area of shrubs with distressed appearance. Laboratory analytical results for the excavation confirmation samples (SC-1 through SC-5) and soil borings (SB-1 through SB-5) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable JANEPO action levels.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended.

8.0 Closure and Limitations

This report has been prepared for the exclusive use of Enterprise and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with Enterprise. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

Tables

Table 1. JANEPO/NMOCD Site Ranking Determination
Enterprise Field Services, LLC
Lateral 2C-29 (7/26/2016) Pipeline Release
Rio Arriba County, New Mexico

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential between location and large, regional washes as derived from the topographic map of the area.	NMOCD Online database, Lapis Point Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Lapis Point Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	An unnamed, ephemeral drainage channel is located approximately 350 feet to the southeast.	Lapis Point Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		10		

Table 2. Excavation Confirmation Soil Sampling Results - Benzene, Total BTEX, and TPH
Enterprise Field Services, LLC
Lateral 2C-29 (7/26/2016) Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Location	Approximate Sample Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
JANEPO/NMOCD Action Levels*				10	NE	NE	NE	50	1,000**	
Excavation Confirmation Samples										
SC-1	8/9/2016	East Wall	0.5 to 19	<0.098	0.32	0.52	6.0	6.8	110	20
SC-2	8/9/2016	South Wall	0.5 to 19	<0.047	<0.094	<0.094	0.75	0.75	46	15
SC-3	8/9/2016	West Wall	0.5 to 19	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	<10
SC-4	8/9/2016	North Wall	0.5 to 19	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	<10
SC-5	8/9/2016	Base	19	<0.047	0.13	0.12	1.6	1.9	61	92

Notes:

PID - photoionization detector
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not-established

JANEPO - Jicarilla Apache Nation Environmental Protection Office

*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*

**Based on a site ranking of 10.

BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH - total petroleum hydrocarbons

GRO - gasoline range organics

DRO - diesel range organics

NMOCD - New Mexico Oil Conservation Division

Table 3. Soil Boring Sampling Results - VOCs, Benzene, Total BTEX, and TPH
Enterprise Field Services, LLC
Lateral 2C-29 (7/26/2016) Pipeline Release
Rio Arriba County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
JANEPO/NMOCD Action Levels*			--	10	NE	NE	NE	50	1,000**	
Soil Boring Samples										
SB-1	8/18/2016	2	36	--	--	--	--	--	--	--
		4	37	--	--	--	--	--	--	--
		6	93	--	--	--	--	--	--	--
		8	104	<0.023	<0.046	<0.046	<0.092	<0.207	<4.6	<9.8
		10	82	--	--	--	--	--	--	--
		12	140	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	<9.2
SB-2	8/18/2016	2	37	--	--	--	--	--	--	--
		4	23	--	--	--	--	--	--	--
		6	76	--	--	--	--	--	--	--
		8	96	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	<9.6
		10	74	--	--	--	--	--	--	--
		12	123	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	<9.8
SB-3	8/18/2016	2	43	--	--	--	--	--	--	--
		4	87	--	--	--	--	--	--	--
		6	167	<0.025	<0.049	<0.049	<0.098	<0.221	<4.9	<9.6
		8	64	--	--	--	--	--	--	--
		10	109	--	--	--	--	--	--	--
		12	72	<0.025	<0.049	<0.049	<0.098	<0.221	<4.9	<9.5
SB-4	8/18/2016	2	110	<0.025	<0.050	<0.050	<0.10	<0.225	<5.0	<9.8
		4	83	--	--	--	--	--	--	--
		8	77	--	--	--	--	--	--	--
		10	84	--	--	--	--	--	--	--
		12	122	<0.025	<0.049	<0.049	<0.098	<0.221	<4.9	<9.6
SB-5	8/18/2016	2	13	--	--	--	--	--	--	--
		4	17	--	--	--	--	--	--	--
		6	32	--	--	--	--	--	--	--
		8	61	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	<9.7
		10	53	--	--	--	--	--	--	--
		12	67	<0.023	<0.046	<0.046	<0.092	<0.207	<4.6	<9.5

Notes: VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
mg/kg - milligrams per kilogram
NE - not-established
JANEPO - Jicarilla Apache Nation Environmental Protection Office
*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*
**Based on a site ranking of 10.

BTEX - benzene, toluene, ethylbenzene, and xylenes
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
NMOCD - New Mexico Oil Conservation Division

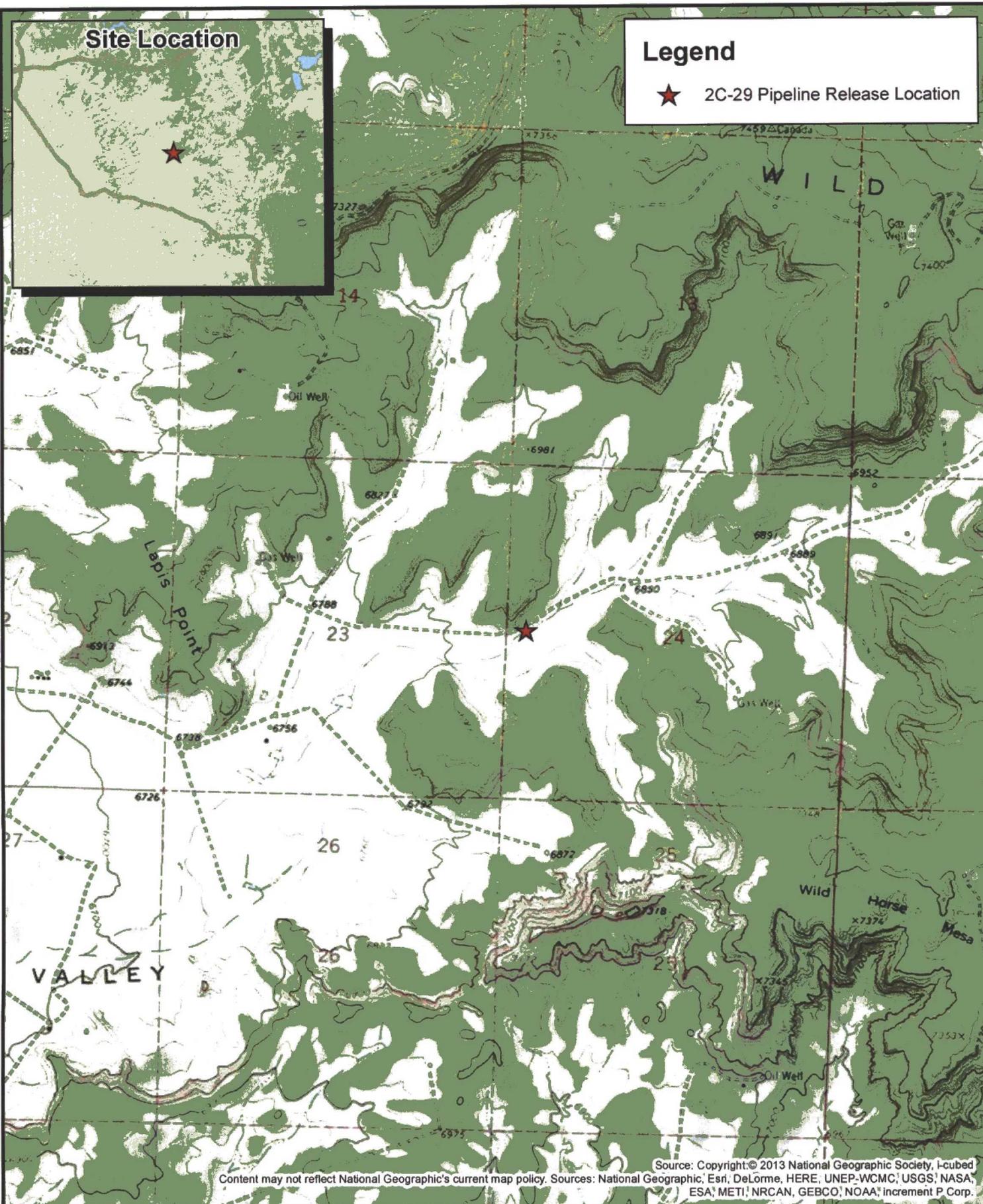
Figures

Site Location



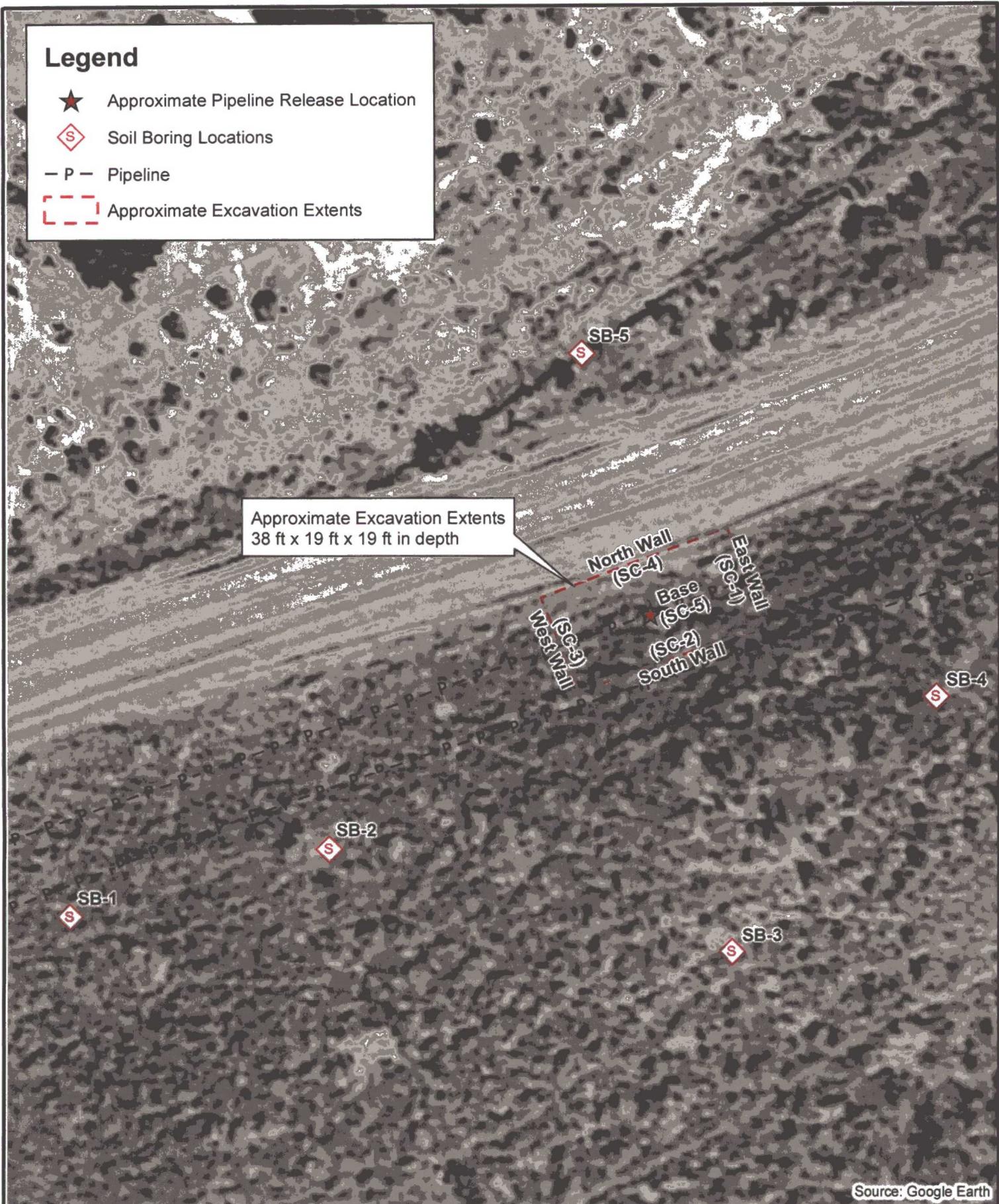
Legend

★ 2C-29 Pipeline Release Location



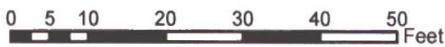
Legend

- ★ Approximate Pipeline Release Location
- ◊ Soil Boring Locations
- P - Pipeline
- - - Approximate Excavation Extents



Source: Google Earth

Rule Engineering, LLC
Solutions to Regulations for Industry



1 inch = 25 feet



E-S24-T25N-R05W
N36.38551, W107.31925
Rio Arriba County, NM

Figure 2
Aerial Site Map
Lateral 2C-29 (7/26/2016)
Pipeline Release

Appendix A

Executed C-138 Solid Waste Acceptance Form

25 N French Dr., Hobbs, NM 88240
01 W Grand Avenue, Artesia, NM 88210
000 Rio Brazos Road, Aztec, NM 87410
20 S St Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

Originating Site:
Lateral 2C-29

Location of Material (Street Address, City, State or ULSTR):
Section 22 T 25 N R 5W, Rio Arriba County, NM: 36.380625, -107.343949

Source and Description of Waste:
Source: Hydrocarbon impacted soil associated with a natural gas pipeline release.
Description: Hydrocarbon impacted soil associated with a natural gas pipeline release.
Estimated Volume: 50 (yd) bbls Known Volume (to be entered by the operator at the end of the haul) 364 yds 120 (yd) bbls

GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

Thomas Long, representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988
regulatory determination, the above described waste is: (Check the appropriate classification)

- RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency Monthly Weekly Per Load
- RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

MSDS Information RCRA Hazardous Waste Analysis Process Knowledge Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

Thomas Long, 2-17-16, representative for Enterprise Products Operating authorize to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

Craig Schmitz, representative for TNT Landfarm, Inc. do hereby certify that
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples
have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results
of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of
19.15.36 NMAC.

Transporter: To Be Determined

OCD Permitted Surface Waste Management Facility

Name and Facility Permit # ENT Evap Pond Landfarm, NM01-0008
Address of Facility 70 CR 405, Lindrith NN
Method of Treatment and/or Disposal
 Evaporation Injection Treating Plant Landfarm Landfill Other

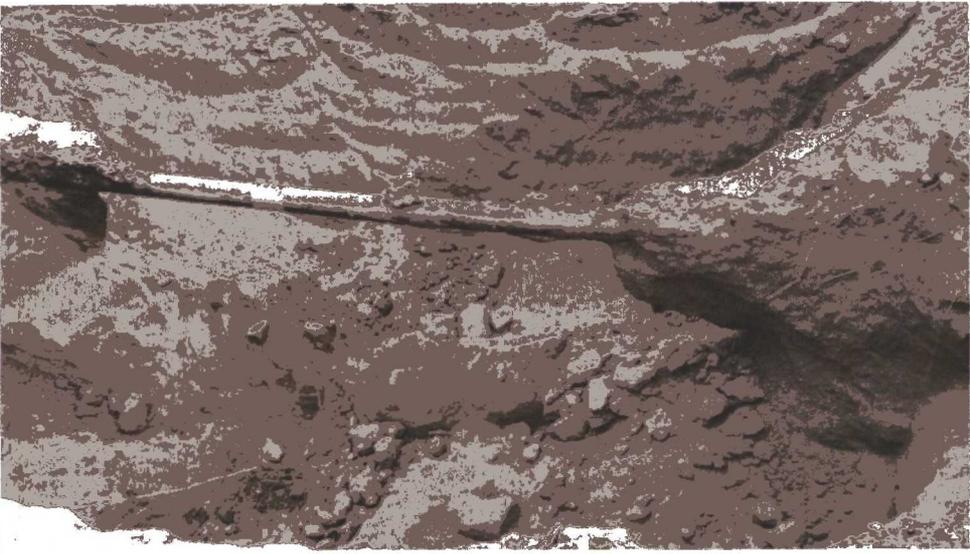
Waste Acceptance Status:
 APPROVED DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Tony L. Schmitz TITLE: MANAGER V.P. DATE: 2/17/16
SIGNATURE: [Signature] TELEPHONE NO.: 505-322-2737
Surface Waste Management Facility Authorized Agent

Appendix B
Photograph Log

Photograph Log
Lateral 2C-29 (7/26/2016) Pipeline Release
Enterprise Field Services, LLC



Photograph #1	
Client: Enterprise	
Site Name: Lateral 2C-29 (7/26/2016) Pipeline Release	
Date Photo Taken: August 9, 2016	
Release Location: N36.38551, W107.31925 E-24-25N-5W Rio Arriba County, NM	
Photo Taken by: Justin Valdez	

Appendix C
Analytical Laboratory Reports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 18, 2016

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Lateral 2C-29

OrderNo.: 1608707

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/11/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lateral 2C-29
Lab ID: 1608707-001

Client Sample ID: SC-1
Collection Date: 8/9/2016 4:00:00 PM
Received Date: 8/11/2016 6:45:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	20	9.7		mg/Kg	1	8/16/2016 3:54:37 AM	26952
Surr: DNOP	102	70-130		%Rec	1	8/16/2016 3:54:37 AM	26952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	110	20		mg/Kg	4	8/16/2016 9:17:20 PM	26959
Surr: BFB	211	68.3-144	S	%Rec	4	8/16/2016 9:17:20 PM	26959
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.098		mg/Kg	4	8/16/2016 9:17:20 PM	26959
Toluene	0.32	0.20		mg/Kg	4	8/16/2016 9:17:20 PM	26959
Ethylbenzene	0.52	0.20		mg/Kg	4	8/16/2016 9:17:20 PM	26959
Xylenes, Total	6.0	0.39		mg/Kg	4	8/16/2016 9:17:20 PM	26959
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	4	8/16/2016 9:17:20 PM	26959

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 1 of 9
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-2

Project: Lateral 2C-29

Collection Date: 8/9/2016 3:05:00 PM

Lab ID: 1608707-002

Matrix: SOIL

Received Date: 8/11/2016 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	15	9.3		mg/Kg	1	8/16/2016 4:16:27 AM	26952
Surr: DNOP	84.3	70-130		%Rec	1	8/16/2016 4:16:27 AM	26952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	46	9.4		mg/Kg	2	8/16/2016 9:40:48 PM	26959
Surr: BFB	201	68.3-144	S	%Rec	2	8/16/2016 9:40:48 PM	26959
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	2	8/16/2016 9:40:48 PM	26959
Toluene	ND	0.094		mg/Kg	2	8/16/2016 9:40:48 PM	26959
Ethylbenzene	ND	0.094		mg/Kg	2	8/16/2016 9:40:48 PM	26959
Xylenes, Total	0.75	0.19		mg/Kg	2	8/16/2016 9:40:48 PM	26959
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	2	8/16/2016 9:40:48 PM	26959

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
 Project: Lateral 2C-29
 Lab ID: 1608707-003

Client Sample ID: SC-3
 Collection Date: 8/9/2016 3:30:00 PM
 Received Date: 8/11/2016 6:45:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/16/2016 4:38:12 AM	26952
Surr: DNOP	82.8	70-130		%Rec	1	8/16/2016 4:38:12 AM	26952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/16/2016 10:04:14 PM	26959
Surr: BFB	89.5	68.3-144		%Rec	1	8/16/2016 10:04:14 PM	26959
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/16/2016 10:04:14 PM	26959
Toluene	ND	0.047		mg/Kg	1	8/16/2016 10:04:14 PM	26959
Ethylbenzene	ND	0.047		mg/Kg	1	8/16/2016 10:04:14 PM	26959
Xylenes, Total	ND	0.095		mg/Kg	1	8/16/2016 10:04:14 PM	26959
Surr: 4-Bromofluorobenzene	95.3	80-120		%Rec	1	8/16/2016 10:04:14 PM	26959

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 3 of 9
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Lateral 2C-29

Collection Date: 8/9/2016 3:00:00 PM

Lab ID: 1608707-004

Matrix: SOIL

Received Date: 8/11/2016 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/16/2016 5:00:01 AM	26952
Surr: DNOP	83.9	70-130		%Rec	1	8/16/2016 5:00:01 AM	26952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/16/2016 10:27:47 PM	26959
Surr: BFB	80.9	68.3-144		%Rec	1	8/16/2016 10:27:47 PM	26959
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	8/16/2016 10:27:47 PM	26959
Toluene	ND	0.048		mg/Kg	1	8/16/2016 10:27:47 PM	26959
Ethylbenzene	ND	0.048		mg/Kg	1	8/16/2016 10:27:47 PM	26959
Xylenes, Total	ND	0.096		mg/Kg	1	8/16/2016 10:27:47 PM	26959
Surr: 4-Bromofluorobenzene	91.9	80-120		%Rec	1	8/16/2016 10:27:47 PM	26959

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Lateral 2C-29

Collection Date: 8/9/2016 3:10:00 PM

Lab ID: 1608707-005

Matrix: SOIL

Received Date: 8/11/2016 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	92	9.8		mg/Kg	1	8/16/2016 5:21:40 AM	26952
Surr: DNOP	87.1	70-130		%Rec	1	8/16/2016 5:21:40 AM	26952
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	61	9.4		mg/Kg	2	8/16/2016 10:51:18 PM	26959
Surr: BFB	252	68.3-144	S	%Rec	2	8/16/2016 10:51:18 PM	26959
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	2	8/16/2016 10:51:18 PM	26959
Toluene	0.13	0.094		mg/Kg	2	8/16/2016 10:51:18 PM	26959
Ethylbenzene	0.12	0.094		mg/Kg	2	8/16/2016 10:51:18 PM	26959
Xylenes, Total	1.6	0.19		mg/Kg	2	8/16/2016 10:51:18 PM	26959
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	2	8/16/2016 10:51:18 PM	26959

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608707

18-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	LCS-26948	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26948	RunNo:	36497					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130588	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.4	70	130			

Sample ID	MB-26948	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26948	RunNo:	36497					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130589	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		87.7	70	130			

Sample ID	LCS-26949	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26949	RunNo:	36499					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130646	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.3	70	130			

Sample ID	MB-26949	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26949	RunNo:	36499					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130647	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.7		10.00		87.0	70	130			

Sample ID	LCS-26947	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26947	RunNo:	36498					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130970	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.2	70	130			

Sample ID	MB-26947	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26947	RunNo:	36498					
Prep Date:	8/12/2016	Analysis Date:	8/15/2016	SeqNo:	1130971	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.7		10.00		87.4	70	130			

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608707

18-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	LCS-26952	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26952	RunNo:	36499					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131127	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	62.6	124			
Surr: DNOP	4.7		5.000		94.7	70	130			

Sample ID	MB-26952	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26952	RunNo:	36499					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131128	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.5		10.00		85.3	70	130			

Sample ID	LCS-26990	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	26990	RunNo:	36499					
Prep Date:	8/15/2016	Analysis Date:	8/16/2016	SeqNo:	1131339	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.9	70	130			

Sample ID	MB-26990	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	26990	RunNo:	36499					
Prep Date:	8/15/2016	Analysis Date:	8/16/2016	SeqNo:	1131341	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		108	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608707

18-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	MB-26959	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	26959	RunNo:	36549					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131799	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	790		1000		79.2	68.3	144			

Sample ID	LCS-26959	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	26959	RunNo:	36549					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131800	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.1	80	120			
Surr: BFB	870		1000		86.6	68.3	144			

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

WO#: 1608707

Hall Environmental Analysis Laboratory, Inc.

18-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	MB-26959	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	26959	RunNo:	36549					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131828	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.4	80	120			

Sample ID	LCS-26959	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	26959	RunNo:	36549					
Prep Date:	8/12/2016	Analysis Date:	8/16/2016	SeqNo:	1131829	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.7	75.3	123			
Toluene	0.94	0.050	1.000	0	94.4	80	124			
Ethylbenzene	0.97	0.050	1.000	0	97.2	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	97.2	83.9	122			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.9	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1608707**

RcptNo: 1

Received by/date:

[Signature]

08/11/16

Logged By: **Lindsay Mangin**

8/11/2016 6:45:00 AM

[Signature]

Completed By: **Lindsay Mangin**

8/11/2016 3:51:35 PM

[Signature]

Reviewed By: **JO**

8/12/16

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Courier

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

of preserved bottles checked for pH:
 (<2 or >12 unless noted)
 Adjusted?
 Checked by:

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. suite 205 Farmington, NM 87401

Phone #: 505 793 9486

email or Fax#: jvaldez@ruleengineering.com

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush _____

Project Name: Lateral 2C-29

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On-ice: Yes No

Sample Temperature: 21



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TPH (Gas only)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8/9/16	1600	Soil	SC-1	4oz Glass	Cold	1608707 -001	+	+	+									
	1505		SC-2			-002	+	+	+									
	1530		SC-3			-003	+	+	+									
	1500		SC-4			-004	+	+	+									
	1510		SC-5			-005	+	+	+									

1600

Date: 8/10/16	Time: 1600	Relinquished by: <u>Justin Valdez</u>	Received by: <u>Heather M. Woods</u>	Date: 8/10/16	Time: 1600	Remarks: Direct Bill to Enterprise Non-AFE: N26179 Attn: Tom Long / Miles Moore
Date: 8/10/16	Time: 1645	Relinquished by: <u>Heather M. Woods</u>	Received by: <u>Christine Walters</u>	Date: 8/10/16	Time: 1645	

8/11/16 2040 Christine Walters 08/11/16 0645

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 25, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Lateral 2C-29

OrderNo.: 1608B98

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/19/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
 Project: Lateral 2C-29
 Lab ID: 1608B98-001

Client Sample ID: SB-1@8
 Collection Date: 8/18/2016 11:00:00 AM
 Received Date: 8/19/2016 7:30:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/23/2016 9:36:38 PM	27100
Surr: BFB	100	70-130		%Rec	1	8/23/2016 9:36:38 PM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/23/2016 9:17:26 AM	27095
Surr: DNOP	80.7	70-130		%Rec	1	8/23/2016 9:17:26 AM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	8/23/2016 9:36:38 PM	27100
Toluene	ND	0.046		mg/Kg	1	8/23/2016 9:36:38 PM	27100
Ethylbenzene	ND	0.046		mg/Kg	1	8/23/2016 9:36:38 PM	27100
Xylenes, Total	ND	0.092		mg/Kg	1	8/23/2016 9:36:38 PM	27100
Surr: 1,2-Dichloroethane-d4	92.0	70-130		%Rec	1	8/23/2016 9:36:38 PM	27100
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	8/23/2016 9:36:38 PM	27100
Surr: Dibromofluoromethane	107	70-130		%Rec	1	8/23/2016 9:36:38 PM	27100
Surr: Toluene-d8	97.2	70-130		%Rec	1	8/23/2016 9:36:38 PM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SB-1@12

Project: Lateral 2C-29

Collection Date: 8/18/2016 11:15:00 AM

Lab ID: 1608B98-002

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/23/2016 11:59:11 PM	27100
Surr: BFB	100	70-130		%Rec	1	8/23/2016 11:59:11 PM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/23/2016 9:38:59 AM	27095
Surr: DNOP	94.9	70-130		%Rec	1	8/23/2016 9:38:59 AM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	8/23/2016 11:59:11 PM	27100
Toluene	ND	0.047		mg/Kg	1	8/23/2016 11:59:11 PM	27100
Ethylbenzene	ND	0.047		mg/Kg	1	8/23/2016 11:59:11 PM	27100
Xylenes, Total	ND	0.095		mg/Kg	1	8/23/2016 11:59:11 PM	27100
Surr: 1,2-Dichloroethane-d4	89.4	70-130		%Rec	1	8/23/2016 11:59:11 PM	27100
Surr: 4-Bromofluorobenzene	96.9	70-130		%Rec	1	8/23/2016 11:59:11 PM	27100
Surr: Dibromofluoromethane	103	70-130		%Rec	1	8/23/2016 11:59:11 PM	27100
Surr: Toluene-d8	94.9	70-130		%Rec	1	8/23/2016 11:59:11 PM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1608B98
 Date Reported: 8/25/2016

CLIENT: Rule Engineering LLC
 Project: Lateral 2C-29
 Lab ID: 1608B98-003

Matrix: SOIL

Client Sample ID: SB-2@8
 Collection Date: 8/18/2016 11:30:00 AM
 Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/24/2016 12:27:33 AM	27100
Surr: BFB	99.4	70-130		%Rec	1	8/24/2016 12:27:33 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/23/2016 10:00:55 AM	27095
Surr: DNOP	89.0	70-130		%Rec	1	8/23/2016 10:00:55 AM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	8/24/2016 12:27:33 AM	27100
Toluene	ND	0.048		mg/Kg	1	8/24/2016 12:27:33 AM	27100
Ethylbenzene	ND	0.048		mg/Kg	1	8/24/2016 12:27:33 AM	27100
Xylenes, Total	ND	0.096		mg/Kg	1	8/24/2016 12:27:33 AM	27100
Surr: 1,2-Dichloroethane-d4	90.9	70-130		%Rec	1	8/24/2016 12:27:33 AM	27100
Surr: 4-Bromofluorobenzene	94.8	70-130		%Rec	1	8/24/2016 12:27:33 AM	27100
Surr: Dibromofluoromethane	108	70-130		%Rec	1	8/24/2016 12:27:33 AM	27100
Surr: Toluene-d8	98.9	70-130		%Rec	1	8/24/2016 12:27:33 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SB-2@12

Project: Lateral 2C-29

Collection Date: 8/18/2016 11:45:00 AM

Lab ID: 1608B98-004

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/24/2016 12:55:59 AM	27100
Surr: BFB	97.0	70-130		%Rec	1	8/24/2016 12:55:59 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/23/2016 12:29:41 PM	27095
Surr: DNOP	77.6	70-130		%Rec	1	8/23/2016 12:29:41 PM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	8/24/2016 12:55:59 AM	27100
Toluene	ND	0.048		mg/Kg	1	8/24/2016 12:55:59 AM	27100
Ethylbenzene	ND	0.048		mg/Kg	1	8/24/2016 12:55:59 AM	27100
Xylenes, Total	ND	0.096		mg/Kg	1	8/24/2016 12:55:59 AM	27100
Surr: 1,2-Dichloroethane-d4	91.9	70-130		%Rec	1	8/24/2016 12:55:59 AM	27100
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	8/24/2016 12:55:59 AM	27100
Surr: Dibromofluoromethane	106	70-130		%Rec	1	8/24/2016 12:55:59 AM	27100
Surr: Toluene-d8	98.6	70-130		%Rec	1	8/24/2016 12:55:59 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608B98

Date Reported: 8/25/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SB-3@6

Project: Lateral 2C-29

Collection Date: 8/18/2016 12:20:00 PM

Lab ID: 1608B98-005

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/24/2016 1:24:29 AM	27100
Surr: BFB	100	70-130		%Rec	1	8/24/2016 1:24:29 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/23/2016 12:57:42 PM	27095
Surr: DNOP	97.6	70-130		%Rec	1	8/23/2016 12:57:42 PM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	8/24/2016 1:24:29 AM	27100
Toluene	ND	0.049		mg/Kg	1	8/24/2016 1:24:29 AM	27100
Ethylbenzene	ND	0.049		mg/Kg	1	8/24/2016 1:24:29 AM	27100
Xylenes, Total	ND	0.098		mg/Kg	1	8/24/2016 1:24:29 AM	27100
Surr: 1,2-Dichloroethane-d4	85.8	70-130		%Rec	1	8/24/2016 1:24:29 AM	27100
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	8/24/2016 1:24:29 AM	27100
Surr: Dibromofluoromethane	98.8	70-130		%Rec	1	8/24/2016 1:24:29 AM	27100
Surr: Toluene-d8	97.1	70-130		%Rec	1	8/24/2016 1:24:29 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SB-3@12

Project: Lateral 2C-29

Collection Date: 8/18/2016 12:45:00 PM

Lab ID: 1608B98-006

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/24/2016 1:52:56 AM	27100
Surr: BFB	100	70-130		%Rec	1	8/24/2016 1:52:56 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/23/2016 1:25:40 PM	27095
Surr: DNOP	77.5	70-130		%Rec	1	8/23/2016 1:25:40 PM	27095
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	8/24/2016 1:52:56 AM	27100
Toluene	ND	0.049		mg/Kg	1	8/24/2016 1:52:56 AM	27100
Ethylbenzene	ND	0.049		mg/Kg	1	8/24/2016 1:52:56 AM	27100
Xylenes, Total	ND	0.098		mg/Kg	1	8/24/2016 1:52:56 AM	27100
Surr: 1,2-Dichloroethane-d4	84.9	70-130		%Rec	1	8/24/2016 1:52:56 AM	27100
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	8/24/2016 1:52:56 AM	27100
Surr: Dibromofluoromethane	104	70-130		%Rec	1	8/24/2016 1:52:56 AM	27100
Surr: Toluene-d8	98.2	70-130		%Rec	1	8/24/2016 1:52:56 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608B98

Date Reported: 8/25/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SB-4@2

Project: Lateral 2C-29

Collection Date: 8/18/2016 12:55:00 PM

Lab ID: 1608B98-007

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/24/2016 2:21:27 AM	27100
Surr: BFB	103	70-130		%Rec	1	8/24/2016 2:21:27 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/24/2016 9:15:46 AM	27096
Surr: DNOP	94.0	70-130		%Rec	1	8/24/2016 9:15:46 AM	27096
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	8/24/2016 2:21:27 AM	27100
Toluene	ND	0.050		mg/Kg	1	8/24/2016 2:21:27 AM	27100
Ethylbenzene	ND	0.050		mg/Kg	1	8/24/2016 2:21:27 AM	27100
Xylenes, Total	ND	0.10		mg/Kg	1	8/24/2016 2:21:27 AM	27100
Surr: 1,2-Dichloroethane-d4	84.1	70-130		%Rec	1	8/24/2016 2:21:27 AM	27100
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	8/24/2016 2:21:27 AM	27100
Surr: Dibromofluoromethane	106	70-130		%Rec	1	8/24/2016 2:21:27 AM	27100
Surr: Toluene-d8	97.4	70-130		%Rec	1	8/24/2016 2:21:27 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SB-4@12

Project: Lateral 2C-29

Collection Date: 8/18/2016 1:30:00 PM

Lab ID: 1608B98-008

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/24/2016 2:49:52 AM	27100
Surr: BFB	101	70-130		%Rec	1	8/24/2016 2:49:52 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/24/2016 10:22:33 AM	27096
Surr: DNOP	90.6	70-130		%Rec	1	8/24/2016 10:22:33 AM	27096
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	8/24/2016 2:49:52 AM	27100
Toluene	ND	0.049		mg/Kg	1	8/24/2016 2:49:52 AM	27100
Ethylbenzene	ND	0.049		mg/Kg	1	8/24/2016 2:49:52 AM	27100
Xylenes, Total	ND	0.098		mg/Kg	1	8/24/2016 2:49:52 AM	27100
Surr: 1,2-Dichloroethane-d4	86.4	70-130		%Rec	1	8/24/2016 2:49:52 AM	27100
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	8/24/2016 2:49:52 AM	27100
Surr: Dibromofluoromethane	103	70-130		%Rec	1	8/24/2016 2:49:52 AM	27100
Surr: Toluene-d8	97.9	70-130		%Rec	1	8/24/2016 2:49:52 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608B98

Date Reported: 8/25/2016

CLIENT: Rule Engineering LLC

Client Sample ID: SB-5@8

Project: Lateral 2C-29

Collection Date: 8/18/2016 2:00:00 PM

Lab ID: 1608B98-009

Matrix: SOIL

Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/24/2016 3:18:17 AM	27100
Surr: BFB	97.5	70-130		%Rec	1	8/24/2016 3:18:17 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/24/2016 10:44:21 AM	27096
Surr: DNOP	96.0	70-130		%Rec	1	8/24/2016 10:44:21 AM	27096
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	8/24/2016 3:18:17 AM	27100
Toluene	ND	0.048		mg/Kg	1	8/24/2016 3:18:17 AM	27100
Ethylbenzene	ND	0.048		mg/Kg	1	8/24/2016 3:18:17 AM	27100
Xylenes, Total	ND	0.096		mg/Kg	1	8/24/2016 3:18:17 AM	27100
Surr: 1,2-Dichloroethane-d4	86.0	70-130		%Rec	1	8/24/2016 3:18:17 AM	27100
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	8/24/2016 3:18:17 AM	27100
Surr: Dibromofluoromethane	97.0	70-130		%Rec	1	8/24/2016 3:18:17 AM	27100
Surr: Toluene-d8	96.6	70-130		%Rec	1	8/24/2016 3:18:17 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: Lateral 2C-29
Lab ID: 1608B98-010

Matrix: SOIL

Client Sample ID: SB-5@12
Collection Date: 8/18/2016 2:20:00 PM
Received Date: 8/19/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/24/2016 3:46:45 AM	27100
Surr: BFB	96.7	70-130		%Rec	1	8/24/2016 3:46:45 AM	27100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/24/2016 11:06:18 AM	27096
Surr: DNOP	94.5	70-130		%Rec	1	8/24/2016 11:06:18 AM	27096
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	8/24/2016 3:46:45 AM	27100
Toluene	ND	0.046		mg/Kg	1	8/24/2016 3:46:45 AM	27100
Ethylbenzene	ND	0.046		mg/Kg	1	8/24/2016 3:46:45 AM	27100
Xylenes, Total	ND	0.092		mg/Kg	1	8/24/2016 3:46:45 AM	27100
Surr: 1,2-Dichloroethane-d4	87.7	70-130		%Rec	1	8/24/2016 3:46:45 AM	27100
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	8/24/2016 3:46:45 AM	27100
Surr: Dibromofluoromethane	103	70-130		%Rec	1	8/24/2016 3:46:45 AM	27100
Surr: Toluene-d8	96.1	70-130		%Rec	1	8/24/2016 3:46:45 AM	27100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B98

25-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	LCS-27095	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	27095	RunNo:	36683					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1136774	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
I Range Organics (DRO)	46	10	50.00	0	92.9	62.6	124			
Surr: DNOP	4.2		5.000		83.3	70	130			

Sample ID	MB-27095	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	27095	RunNo:	36683					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1136775	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
I Range Organics (DRO)	ND	10								
Surr: DNOP	11		10.00		110	70	130			

Sample ID	LCS-27096	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	27096	RunNo:	36709					
Prep Date:	8/22/2016	Analysis Date:	8/24/2016	SeqNo:	1137693	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	62.6	124			
Surr: DNOP	4.9		5.000		98.6	70	130			

Sample ID	MB-27096	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	27096	RunNo:	36709					
Prep Date:	8/22/2016	Analysis Date:	8/24/2016	SeqNo:	1137694	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
I Range Organics (DRO)	ND	10								
Surr: DNOP	9.0		10.00		89.5	70	130			

Sample ID	1608B98-007AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SB-4@2	Batch ID:	27096	RunNo:	36710					
Prep Date:	8/22/2016	Analysis Date:	8/24/2016	SeqNo:	1137965	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.2	45.83	3.843	90.8	33.9	141			
Surr: DNOP	4.4		4.583		95.0	70	130			

Sample ID	1608B98-007AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SB-4@2	Batch ID:	27096	RunNo:	36710					
Prep Date:	8/22/2016	Analysis Date:	8/24/2016	SeqNo:	1137966	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B98

25-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	1608B98-007AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SB-4@2	Batch ID:	27096	RunNo:	36710					
Prep Date:	8/22/2016	Analysis Date:	8/24/2016	SeqNo:	1137966	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.4	46.77	3.843	112	33.9	141	21.0	20	R
Surr: DNOP	5.9		4.677		127	70	130	0	0	

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B98

25-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	mb-27100	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	27100	RunNo:	36701					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1137276	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.9	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.2	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.47		0.5000		93.7	70	130			

Sample ID	lcs-27100	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	27100	RunNo:	36701					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1137277	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	121	70	130			
Toluene	1.0	0.050	1.000	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		107	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.2	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608B98

25-Aug-16

Client: Rule Engineering LLC

Project: Lateral 2C-29

Sample ID	mb-27100	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	27100	RunNo:	36701					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1137291	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.6	70	130			

Sample ID	ics-27100	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	27100	RunNo:	36701					
Prep Date:	8/22/2016	Analysis Date:	8/23/2016	SeqNo:	1137292	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	62.9	123			
Surr: BFB	490		500.0		98.1	70	130			

Qualifiers:

- | | |
|---------------------------------------------------------|-------------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL**

Work Order Number: **1608B98**

RcptNo: 1

Received by/date:

[Signature]

08/19/16

Logged By: **Lindsay Mangin**

8/19/2016 7:30:00 AM

[Signature]

Completed By: **Lindsay Mangin**

8/20/2016 10:35:33 AM

[Signature]

Reviewed By: *Jc* 08/22/16

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Courier

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
 - 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 - 6. Sample(s) in proper container(s)? Yes No
 - 7. Sufficient sample volume for indicated test(s)? Yes No
 - 8. Are samples (except VOA and ONG) properly preserved? Yes No
 - 9. Was preservative added to bottles? Yes No NA
 - 10. VOA vials have zero headspace? Yes No No VOA Vials
 - 11. Were any sample containers received broken? Yes No
 - 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
 - 13. Are matrices correctly identified on Chain of Custody? Yes No
 - 14. Is it clear what analyses were requested? Yes No
 - 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No
- # of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by:

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Ruk Engineering, LLC

Mailing Address: 501 Airport Dr, Suite 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@rukengineering.com

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush

Project Name: _____

Project #: Lateral 2C-29

Project Manager: Heather Woods

Sampler: HW/JV

On Ice: Yes No

Sample Temperature: 21



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TPH + PCBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / TPH)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)	
1/18/16	1100	Soil	SB-1@8	(i) 4 oz Glass	Cold	11088898 -001	X	X											
1/18/16	1115	Soil	SB-1@12			-002	X	X											
3/18/16	1130	Soil	SB-2@8			-003	X	X											
8/18/16	1145	Soil	SB-2@12			-004	X	X											
3/18/16	1220	Soil	SB-3@6			-005	X	X											
3/18/16	1245	Soil	SB-3@12			-006	X	X											
3/18/16	1255	Soil	SB-4@2			-007	X	X											
3/18/16	1330	Soil	SB-4@12			-008	X	X											
8/18/16	1400	Soil	SB-5@8			-009	X	X											
8/18/16	1420	Soil	SB-5@12			-010	X	X											
NFE 1100																			

Date: 3/18/16 Time: 1840 Relinquished by: Heather M. Woods Received by: Christine Walker Date: 3/18/16 Time: 1840 Remarks: Direct Bill to Enterprise

Date: 3/18/16 Time: 2040 Relinquished by: Christine Walker Received by: [Signature] Date: 3/19/16 Time: 0730

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.